Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W3/2018-19/P1-BC1

Date: 14-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**97.88**	90-100
9.5	**82.57**	70-88
4.75	**66.48**	53-71
2.36	**55.27**	42-58
1.18	**43.88**	34-48
0.600	**31.48**	26-38
0.300	**25.77**	18-28
0.150	**17.89**	12-20
0.075	**6.90**	4-10

KIRAN. R
M.E, (Civil-Engg)

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Proprietor

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS1

Date: 15-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}
Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1389**	900
2	Marshall Flow at 60°C, mm.	**3.76**	2.0 - 4.0

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC2

Date: 15-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.45 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	97.88	90-100
9.5	86.76	70-88
4.75	66.34	53-71
2.36	55.27	42-58
1.18	43.65	34-48
0.600	33.58	26-38
0.300	25.87	18-28
0.150	17.98	12-20
0.075	7.89	4-10

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS2 Date: 16-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1366**	900
2	Marshall Flow at 60°C, mm.	**3.65**	2.0 - 4.0

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC3

Date: 16-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.44 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	96.78	90-100
9.5	84.65	70-88
4.75	66.89	53-71
2.36	54.77	42-58
1.18	42.18	34-48
0.600	34.67	26-38
0.300	25.71	18-28
0.150	17.89	12-20
0.075	7.89	4-10

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS3

Date: 17-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1332**	900
2	Marshall Flow at 60°C, mm.	**3.42**	2.0 - 4.0

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC4 Date: 17-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.44 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**97.56**	90-100
9.5	**84.82**	70-88
4.75	**66.77**	53-71
2.36	**55.38**	42-58
1.18	**43.89**	34-48
0.600	**33.66**	26-38
0.300	**23.12**	18-28
0.150	**17.89**	12-20
0.075	**7.68**	4-10

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS4 Date: 18-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1376**	900
2	Marshall Flow at 60°C, mm.	**3.68**	2.0 - 4.0

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC5 Date: 18-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**98.23**	90-100
9.5	**84.90**	70-88
4.75	**66.23**	53-71
2.36	**55.78**	42-58
1.18	**43.98**	34-48
0.600	**31.67**	26-38
0.300	**25.80**	18-28
0.150	**17.33**	12-20
0.075	**8.57**	4-10

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS5 Date: 19-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1373**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W3/2018-19/P1-CB2 Date: 17-05-2018

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)–1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**23.19 %**	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	**26.05 %**	Not more than 35.0 %
3.	Water absorption, %	**0.46 %**	Not more than 2.0 %
4.	Specific gravity	**2.61**	-------
5.	Soundness	**6.12 %**	Max. 12 % in Sodium Sulphate

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC6 Date: 19-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**97.88**	90-100
9.5	**84.67**	70-88
4.75	**66.23**	53-71
2.36	**55.98**	42-58
1.18	**43.41**	34-48
0.600	**33.67**	26-38
0.300	**25.89**	18-28
0.150	**17.23**	12-20
0.075	**8.15**	4-10

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Newzen Consultants Bangalore

NZ/QC/YPD/T&F-W3/2018-19/P1-BS6 Date: 21-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}

Ref.: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1387**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

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NZ/QC/YPD/T&F-W3/2018-19/P1-BC7

Date: 21-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
2.Improvement of drains and resurfacing to roads in SFS 407 area in ward no.03, Attur.
3.Improvement of drains and resurfacing to roads in SFS 707 area in ward no.03, Attur.
4.Improvement of drains and resurfacing to roads in Industrial area in ward no.03, Attur.
5.Improvement of Roads and drains in CHS 707 area in ward no.03, Attur.}
Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**97.86**	90-100
9.5	**84.21**	70-88
4.75	**66.33**	53-71
2.36	**55.12**	42-58
1.18	**43.86**	34-48
0.600	**33.89**	26-38
0.300	**25.28**	18-28
0.150	**17.32**	12-20
0.075	**7.99**	4-10

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M.E, (Civil-Engg)

AE

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Proprietor

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NZ/QC/YPD/T&F-W3/2018-19/P1-BS7

Date: 22-05-2018

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Pkg 1, 1.Improvement of drains and resurfacing to roads in SFS 208 area in ward no.03, Attur.
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Ref.: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. BB Umesha (M/s SMLP Constructions & Asphalt).

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1367**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

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